



جامعة المستقبل
AL MUSTAQBAL UNIVERSITY

جامعة المستقبل
قسم تقنيات البصريات

الاجهزة البصرية 1
Optical Equipment 1

عملي محاضرة 7
Retinoscope

م. كرار عيدان رشيد

The background features several concentric circles of varying radii, some solid and some dashed, creating a ripple effect. A dark red, speech-bubble-like shape is centered on the page, containing the word "Introduction" in white, bold, serif font.

Introduction

Retinoscope

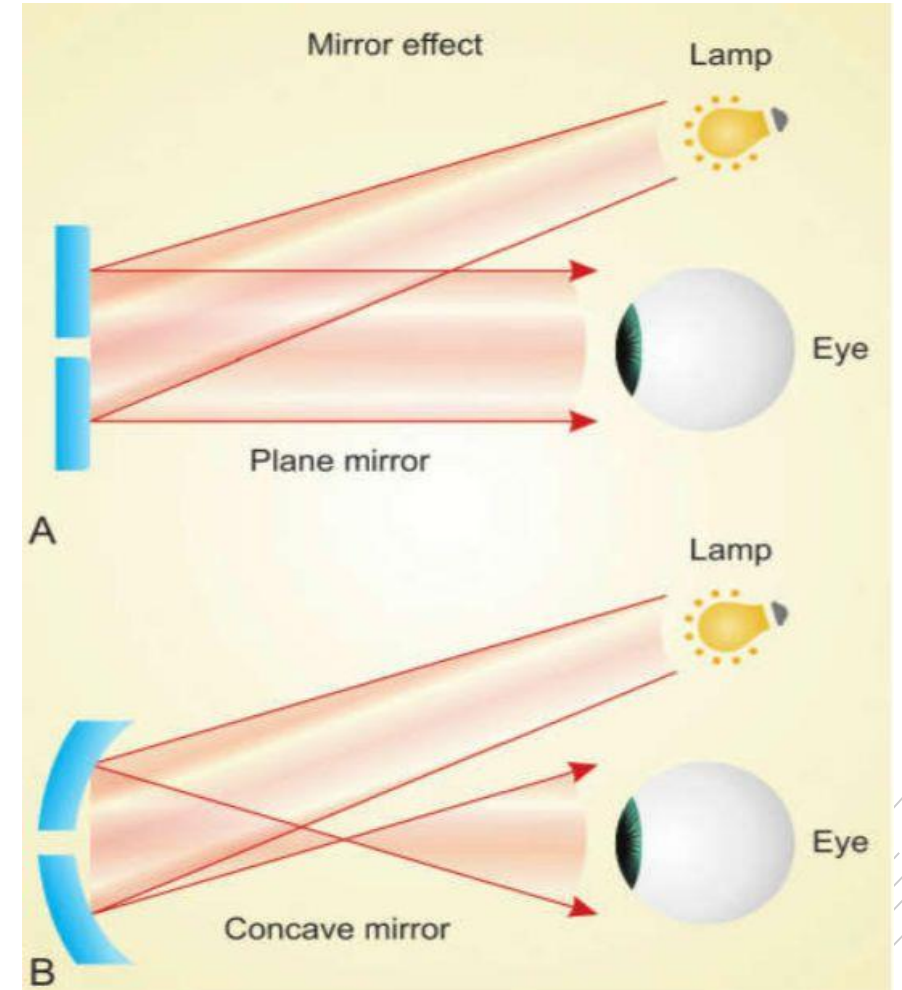
- ❖ **Retinoscope** is an objective method of measuring the optical power of the eye through illuminate the inside of the eye and to observe the light that is reflected from the retina and determine the refractive error of the eye.



Types of Retinoscope

❖ Reflecting mirror retinoscope

1) single plane mirror



2) plane & concave mirror



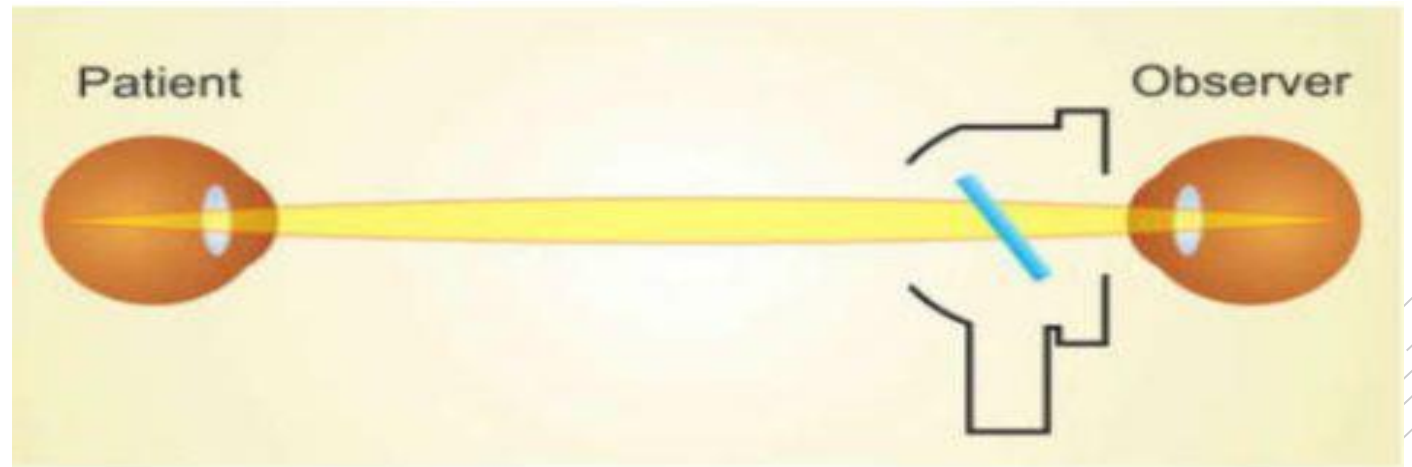
Types of Retinoscope

❖ Self illuminating Retinoscopes

1) Spot Retinoscope

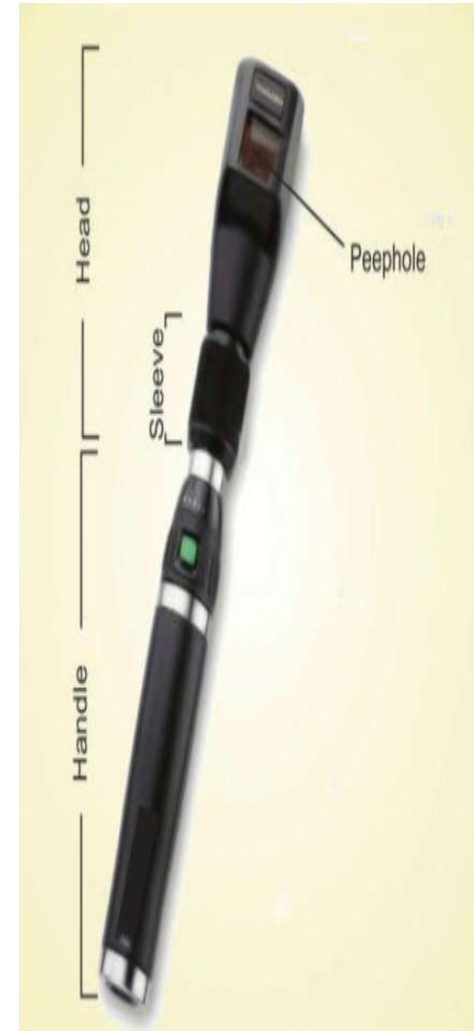


2) Streak Retinoscope



Parts of Retinoscope

- ❖ **Head piece:** It is the upper portion of retinoscope **which consists of :-**
 - **A peephole:** through which examiner looks the retinal reflex.
 - **A sleeve:** which rotates the projected streak of light, hence increases or decreases the width of projected beam.
 - **A socket** for source of illumination, i.e. bulb at its terminal end.



Parts of Retinoscope

- ❖ **Handle piece:** It is the lower portion of retinoscope and has an elongated hollow tube where battery is inserted inside.



Internal Components of Streak Retinoscope

- **Light projection system:** The projection system is the one which provides illumination to the retina and involve the following major components.
 - **Light source**
 - **Condensing lens**
 - **Mirror**
 - **Focusing sleeve**
 - **Electric current source**
- **Examiner observation system:** The observation system enables examiner to see the reflex from the retina.

Advantages

- ❖ Reduces the refraction time and error
- ❖ Extremely important when communication is difficult or impossible
 - Retarded, deaf persons
 - Foreigners
 - Children , infants

Characteristics of Retinoscope

❖ Direction:

- with or against or neutralized.

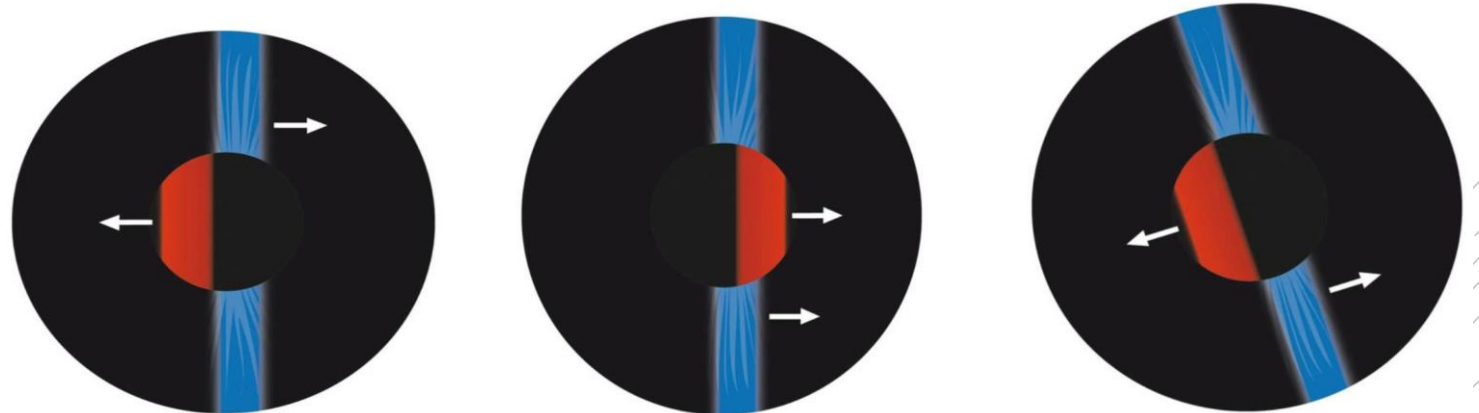
❖ Orientation:

- vertical, horizontal or oblique scissor reflex.

❖ Brightness and speed:

- bright and fast

- dull and slow.

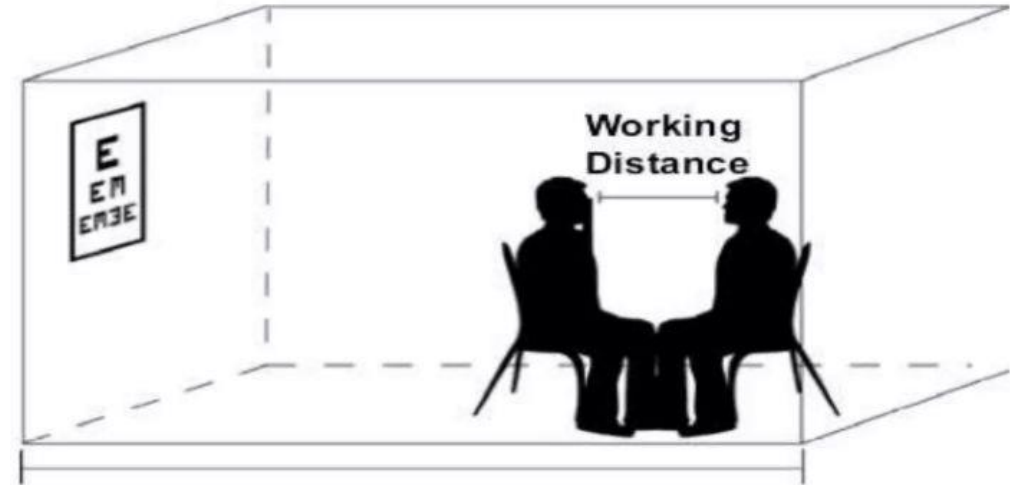


Key points for Retinoscope

- ❖ Establish a dim room.
- ❖ Fog (or occlude, if necessary) the fellow eye.
- ❖ Scope the patient's right eye with your right eye/right hand.
- ❖ Scope the patient's left eye with your left eye/left hand.
- ❖ Keep your scope as close as possible to their visual axis, without interrupting continuous distant fixation.
- ❖ Correct for working distance
 - **add -1.00 sphere if at 1m.**
 - **add -1.50 sphere if at 66 cm.**
 - **add -2.00 sphere if at 50 cm).**

Fixation target

- ❖ The target given to the patient should be 20/200 or 6/60 in the Snellen chart.
- ❖ It is given to the patient to relax accommodation during retinoscopy.



Sources of error during Retinoscopy

- ❖ Incorrect working distance
- ❖ Corneal scar
- ❖ Small pupil
- ❖ Uncontrolled accommodation
- ❖ Cataracts
- ❖ Inexperienced
- ❖ Defects in trial lenses



THANK YOU